

What is claimed is:

1. A rotating mechanism, comprising:
 - 2 a housing, with a curved inner wall, a first positioning portion and a limiting member;
 - 3 a first rotating member rotatably disposed in the housing, with a second positioning portion;
 - 4 a second rotating member rotatably disposed on the first rotating member;
 - 5 a restricting member abutting the limiting member, with a curved outer edge, a first end and a second end, the profile of the curved outer edge approximately corresponding to that of the curved inner wall, the first end rotatably connected to the first rotating member, and the second end abutting the second rotating member;
 - 6 and
 - 7 a resilient element connected to the housing and the first rotating member, wherein the first rotating member rotates within a predetermined angle by means of the resilient element, the first positioning portion and the second positioning portion.
1. The rotating mechanism as claimed in claim 1, wherein the second rotating member further comprises an engaging portion engaging the second end of the restricting member, the second rotating member rotating when the first rotating member rotates within the predetermined angle.

1 3. The rotating mechanism as claimed in claim 1,
2 wherein the limiting member further comprises a curved
3 profile, approximately corresponding to that of the
4 curved inner wall, which connects to the curved inner
5 wall eccentrically such that the restricting member can
6 not move backwards along the curved inner wall when
7 abutting the limiting member.

1 4. The rotating mechanism as claimed in claim 1,
2 wherein the curved inner wall is formed with a plurality
3 of recesses.

1 5. The rotating mechanism as claimed in claim 4,
2 further comprising a central shaft disposed on the
3 housing and surrounded by the curved inner wall, wherein
4 the first rotating member is rotatably disposed on the
5 central shaft.

1 6. The rotating mechanism as claimed in claim 5,
2 wherein the second rotating member, rotatably disposed on
3 the first rotating member and the central shaft,
4 comprises a resilient arm and a protrusion formed
5 thereon, the resilient arm sliding on the curved inner
6 wall of the housing, and the protrusion sliding on the
7 curved inner wall and into the recesses thereof.

1 7. The rotating mechanism as claimed in claim 5,
2 wherein the housing further comprises a through hole, the
3 central shaft disposed on the housing via the through
4 hole.

1 8. The rotating mechanism as claimed in claim 5,
2 further comprising a reinforcing member disposed on the
3 central shaft and between the housing and the first
4 rotating member to reinforce the first rotating member.

1 9. The rotating mechanism as claimed in claim 8,
2 wherein the reinforcing member further comprises a third
3 positioning portion and the first rotating member further
4 comprises a third engaging groove, adjacent to the second
5 positioning portion, receiving the third positioning
6 portion.

1 10. The rotating mechanism as claimed in claim 8,
2 further comprising a first fixing member disposed between
3 the reinforcing member and the housing to fix the housing
4 and central shaft.

1 11. The rotating mechanism as claimed in claim 8,
2 further comprising a second fixing member disposed on the
3 second rotating member to fix the reinforcing member,
4 first rotating member, resilient element and second
5 rotating member.

1 12. The rotating mechanism as claimed in claim 1,
2 wherein the restricting member is disposed on the first
3 rotating member and is adjacent to the second rotating
4 member.

1 13. The rotating mechanism as claimed in claim 1,
2 wherein the first rotating member, the second rotating
3 member and the restricting member rotate to the
4 predetermined angle by means of the resilient element.

1 14. The rotating mechanism as claimed in claim 1,
2 wherein the first rotating member further comprises an
3 annular groove and the second rotating member further
4 comprises an annular flange rotatably disposed in the
5 annular groove.

1 15. The rotating mechanism as claimed in claim 14,
2 wherein damping fluid is filled between the annular
3 groove and the annular flange, enhancing resistance
4 therebetween when the annular flange rotates in the
5 annular groove.

1 16. The rotating mechanism as claimed in claim 15,
2 further comprising a first sealing element and a second
3 sealing element, both disposed between the first rotating
4 member and the second rotating member to prevent leakage
5 of the damping fluid between the annular groove and the
6 annular flange and to enhance friction therebetween.

1 17. The rotating mechanism as claimed in claim 1,
2 wherein the first rotating member further comprises a
3 first engaging groove and a second engaging groove and
4 the restricting member further comprises a first end and
5 a second end, the first end engaged with the first
6 engaging groove, and the second end engaged with the
7 second engaging groove.

1 18. The rotating mechanism as claimed in claim 17,
2 wherein the restricting member swings relatively to the
3 first rotating member.

1 19. The rotating mechanism as claimed in claim 1,
2 wherein the housing further comprises a first connecting
3 hole and the resilient element further comprises a first
4 connecting end disposed in the first connecting hole.

1 20. The rotating mechanism as claimed in claim 1,
2 wherein the first rotating member further comprises a
3 second connecting hole and the resilient element further
4 comprises a second connecting end disposed in the second
5 connecting hole.